37TH CONGRESS, 2d Session. } SENATE. { EX. DOC. No. 32.

MESSAGE

OF THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING,

In compliance to a resolution of the Senate of the 11th instant, a report of the Secretary of State in regard to railway systems in Europe.

MARCH 13, 1862.—Read, ordered to lie on the table, and be printed.

To the Senate of the United States:

In compliance with the resolution of the Senate of the 11th instant, requesting "a copy of any correspondence on the records or files of the Department of State in regard to railway systems in Europe," I transmit a report from the Secretary of State, and the papers by which it was accompanied.

ABRAHAM LINCOLN.

WASHINGTON, *March* 12, 1862.

DEPARTMENT OF STATE, *Washington, March* 12, 1862.

The Secretary of State, to whom was referred the resolution of the Senate of the 11th instant, "requesting the President of the United States, if, in his opinion, it be not incompatible with the public interests, to communicate to the Senate a copy of any correspondence on the records or files of the Department of State in regard to railway systems in Europe," has the honor to lay before the President the papers mentioned in the subjoined list.

Respectfully submitted.

WILLIAM H. SEWARD.

The PRESIDENT.

List of papers accompanying the report of the Secretary of State to the President in answer to the resolution of the Senate of March 11, 1862.

Mr. Bigelow to Mr. Seward, (No. 1,) with an enclosure, February 21, 1862.

Note.—For other information on the subject of this report see annual report of the Secretary of State on foreign commerce for 1858, 35th Congress, 2d session, executive document No. 85, House of Representatives.

Page.

Mr. Ricker to Mr. Cass 224
Same to same 229
Same to same 303
Mr. Endlich to Mr. Cass 338

Annual report of the Secretary of State on foreign commerce for 1859, 36th Congress, 1st session, executive document No. 4, House of Representatives:

Mr. Leas to Mr. Cass 194
Same to same 196
Mr. Giles to Mr. Cass 344

Annual report of the Secretary of State on foreign commerce, 36th Congress, executive document No. 6, Senate:

Mr. White to Mr. Cass 140–147
Mr. Collins to Mr. Cass 260
Mr. Stiles to Mr, Cass 310
Mr. Ricker to Mr. Cass 335
Same to same 341
Same to same 351

Mr. Bigelow to Mr. Seward.

CONSULATE OF THE UNITED STATES,
Paris, February 21, 1862.

SIR: Mr. Beckwith, an American gentleman of fortune residing in Paris, and one of the partners in the commercial house of Russell & Co., in China, has been good enough to give me the results of a careful analysis he has been making of the railroad system of France. It contains so much information that is valuable and not elsewhere easily accessible, gleaned as it has been not only from published documents but from the lips of the leading bankers and railroad proprietors in France, that I have requested his permission to forward it to the State Department. A perusal of Mr. Beckwith's paper will satisfy you, I am persuaded, that there is some element of prosperity in the French railroad system wanting to the railroad systems of all other nations, and especially to that of the United States. No country has as great a need of railway development as ours, none has as much wealth and power to develop by railways at an equal expense, and yet in no country are the railways poorer property to stockholders. On the other hand, in no country are the railways so uniformly good property as in France. I believe there is not a railway in the empire that does not pay good dividends. The English build good roads, but, as a general thing, they are poor property. The American roads are both badly built and poor property, while the French roads are uniformly well built and good property.

The secret of this is precisely what our government ought to find out as soon as possible. It has been the final result of a great many abortive projects, covering a period of over thirty years of experimentation, and, though not faultless, is doubtless the most perfect in the world. It was inaugurated when the finances of France were in a deplorable state, and it has added incalculably to her wealth as well as to her political power, and is to-day, directly and indirectly, the main basis of her financial credit.

No one who has ever cast an intelligent glance over a map of the United States need be told that a comprehensive and remunerative railway system is, next to a free government, the great necessity of our country. The late rebellion has shown its importance in many respects not so apparent before.

Had our territory been properly bound together by ways of iron, under a system of railway administration adapted to the country, it would have been impossible to have organized a formidable rebellion against the federal government, and, in case of such a rebellion, such means of communication would have furnished the most important agencies for reducing it.

Has not the time to inaugurate such a system arrived when the want is felt, when the country is not nice in weighing and measuring the power confided to the executive, and when the capital of the country is more than usually indifferent to changes and innovations affecting its employment, provided they look to the greater security and integrity of the Union? It is in such times of political and financial trial that nations receive their great social and industrial impulses. The French government, as I have already remarked, has built up her credit from the lowest to the highest in Europe mainly by her railway system. Russia had scarcely signed the treaty of peace which brought the Crimean war to a close when she began to carry out the vast designs for opening up to commerce and settlement the vast proportions of her empire, of which the war had revealed the necessity, and also to inaugurate a system of common schools, and to emancipate her serfs. These were a few of the great enterprises which she commenced, and with every prospect of success, when she was pronounced by the English press exhausted and bankrupt. We, too, have a war to close up, slaves to emancipate, or at least to place upon a footing in harmony with our political system, and railways to build. Especially have we railways to build; that is, we have railways to build if we can build and run them productively, so that they will strengthen rather than weaken the credit of the government; so that they will be sources of wealth, and not like so many already built in America, a burden to the proprietors.

Mr. Beckwith thinks, and not without good reason, it seems to me, that we shall find at the close of this war one-half of our cotton business has been transferred to India. Soon, too, Russian roads will be opened through the whole region of the Terre Norre, from the Black sea to the Baltic, which, from its rich bottomless soils, will yield incalculable quantities of food now inaccessible. France is pushing her railway system down into Spain, and, in concert with that government, is opening up vast regions hitherto uncultivated, which would grow wheat enough to feed all Europe. In these ways our export trade is seriously threatened, and can only be preserved by a railway system proportioned to the magnitude of our territory and its natural resources, by which everything that the industry of the country can produce can have its market. The union of the Pacific and seaboard States by an iron road never appeared so clearly a national necessity as it has since the recent threatened rupture with England. The first and inevitable result of a war with any great naval power would be the loss of our California possessions.

Whatever may have been the traditional policy of the government heretofore, some easy, sure, and rapid communication between the Atlantic and the Pacific is now a subject of such direct national concern that the government must charge itself with the execution of it without much delay.

While this necessity is pressing upon us Congress is proposing to invest the President with athority to take possession of railway and telegraphic lines in rebel hands. Have you not here the nucleus around which to construct a system of railways for the whole country, comprehensive enough to secure all the advantages of organization, unity, and enlightened supervision which contribute so much to the usefulness and prosperity of the French system, without interfering with or paralyzing private enterprise, the sagacity of which is so highly and justly prized in America. The fact that we are coming out of this war largely in debt seems to me to be rather in favor of than against such a policy. If the financial programme is a sound one, and is based on sound financial principles, it will inspire the confidence of capital, and that is all that would be required. Ours is one of the wealthiest countries in the world, beyond a question, at this moment, and yet it is, financially, one of the weakest. This is owing to the rude and imperfect financial schemes of which its wealth is the sport and victim. The history of all our public and private financial associations and corporations, and of our periodical financial crises for the last thirty years, not to speak of what has occurred during the past twelve months, is a proof of it. We must reform this. We must put our finances upon a more scientific basis, and hedge it about with more faithful guarantees. If we do, we shall be richer as a nation than we were before the war.

Russia could not borrow a dollar in Europe during the war of 1854, but she kept her credit good, and at the close brought forward her programme of public improvement upon such a wise financial basis that it promptly commanded all the means she required, and that, too, in spite of the envenomed opposition of the British press. We shall encounter and we can overcome the same difficulties if we employ the same means; that is, if we treat the public credit as the most valuable possession of the government, its preservation as the highest test of statesmanship, and if we show that the principal study of our rulers is to develope the wealth upon which the credit of the country rests, without interfering with, so as to discourage, private enterprise.

If, as I presume, the end of the present war can be foreseen by the government at no very distant period, its members must naturally be, more or less, occupied in trying to anticipate the steps necessary to be taken to restore the ancient prosperity and power of the United States; for the country will expect of this administration such a justification of the high estimate it has placed upon the Union.

A comprehensive railway system, such as I have suggested, seems better adapted to our needs and resources, as a new basis of national credit and prosperity, than any of equal importance and availability. Hence my reasons for inviting your attention to the enclosed analysis made by Mr. Beckwith, the full value of which only those who have attempted to master the intricacies of the French railway system will know how fully to appreciate.

I am, sir, very respectfully, yours,

JOHN BIGELOW,
United States Consul.

Hon. Wm. H. Seward,
Secretary of State.

ANALYSIS OF THE RAILWAY SYSTEM OF FRANCE, BY N. M. BECKWITH. FEBRUARY 17, 1862.

The railways of France radiate from Paris toward the frontiers of the empire. The plan is composed of trunk lines, with branches and cross roads to serve the sections of country between the main lines.

Numerous companies have been formed at different periods, but considerations of economy in constructing and efficiency in working the roads when made, have led to the fusion of the main lines with their tributaries, and the whole of the companies are now resolved into six large associations, which embrace all the roads of importance in the empire.

The companies do not acquire perpetual titles to the lands. The state sustains the theory that all ways of transport and travel, such as turnpikes, canals, and railways, are for public use, and should be made and supported by the public, and remain public property; and that private capital and enterprise should be called in aid only for limited periods, and rewarded in conformity, in order that the public service may be finally and permanently performed at the minimum cost.

The ground is therefore first condemned to public uses; on payment of the indemnity the title vests in the state; the land is then conceded to companies for a term, usually ninety-nine years.

At the expiration of the concession the land and road-way reverts to the state, and the companies become completely divested by receiving the value of the buildings, iron, and rolling stock then in existence on the roads.

The state also reserves in concessions the right to terminate them prematurely, but only on the conditions named, which are highly advantageous to the companies.

To encourage the necessary investments of money, the state usually guarantees an interest of four per cent, and a sinking fund, for fifty years; legalizes a tariff, at fair rates, and in some cases contributes to the capital, which contributions draw no interest, and are not reimbursable, but participate in dividends, if any, in excess of payments agreed upon to be first made.

The supervision of the roads pertains to the department of the interior, a subdivision of which is the board of works. This board is especially charged with providing the plans of construction, directing the execution of them, and supervising the working of them when completed, especially their movements in their relation to the safety of persons and property.

Changes of tariff must have the sanction of the minister of works; the monetary operations are under the control of the minister of finance; and the accounts are verified by a comission of seven, composed of four from the ministry of finance, and three from the board of works.

The minister of the interior prescribes for the roads a special police, comprising a chief, thirty-one heads of local departments, and numerous inspectors, who are divided into three classes, portions of which are always on duty along the lines.

The funds for construction are derived, first, from shares; second, from loans; and third, from subventions of the government.

The financial operations will be best understood by an example.

"Paris, Lyons, and Mediterranean."

80, 000 3 per cent. bonds of	$250,	$20, 000, 000, sold at $150..	$12,000,000
228, 000 3 per cent. bonds of	125,	28, 500, 000, sold at 75..	17,100,000
1, 521, 000 3 per cent. bonds of	100,	152, 100, 000, sold at 60..	91,260,000
Bond debt		200, 600, 000, proceeds	120,360,000
800, 000 shares, $100 paid in full			80,000,000
Subvention of the government			44,723,792
Cash capital			245,083,792

It will be observed that the bonds bear three per cent. interest, but are sold at a rate which increases the interest to five per cent. on the proceeds of the sales.

Bonds.....	$200, 600, 000, at 3 per cent. interest.....	$6, 018, 000
Proceeds of sales...	120, 360, 000, at 5 per cent. interest.....	6, 018, 000

The difference or loss, 80, 240, 000, constitutes a premium of 40 per cent. on the bonds, or 66⅔ cents on the price paid for them, which the holder receives when the bonds are paid.

Some of the bonds first issued bear four per cent., but were sold at corresponding rates, producing nearly the same results as to interest. I therefore leave out this modification and treat them all as three per cent. for the sake of brevity and clearness of exposition.

This is a large premium for money, but it secures a low interest, and by distributing the payment of the loss over a period of ninety-nine years, it is not much felt. The bondholder gets five per cent. for his money, which is a fair rate for a good security, and he is tempted by the margin of sixty-six and two-thirds per cent. to trade upon, which is enlivened by the chances of premature payment; all bonds are redeemable within the term of the concession, (ninety-nine years,) but a portion is paid off each year by the sinking fund, and the bonds so paid are determined by lottery. The future cost of the road will thus be $325,323,792; the present cost or cash capital, $245,083,792.

The payments for the company to provide are the interest on bonds, and, finally, the bonds; the shares also must be redeemed or refunded, and, in this instance, the payments must all be made in ninety-four years, or five years before the expiration of the concession.

The earnings of the road must, therefore, be divided and distributed as follows: 1st. Interest on bonds; 2d. Sinking fund for bonds and shares; 3d. Interest of four per cent. on shares; 4th. Reserve fund for contingencies, never to exceed $2,000,000; 5th. Gratuity of operatives, contingent on amount of dividends; 6th. Dividend of eight per cent. on shares; and 7th. Supplementary dividend of the remainder, one-half of which goes to the shares, and the other half to the government.

To distribute the payment of the bonds and the interest on them equally over the whole term, a sum is carried to the sinking fund, which, added to the interest, produces an annuity which will cover the interest and extinguish the bonds in ninety-four years. This sum will be $398,701 47, and added to the interest, $6,018,000, gives the annuity of $6,416,701 47.

The appropriation to the sinking funds is equivalent to an increase of interest of about one-fifth of one per cent. on the bonds, or one-third of one per cent. on the proceeds of the bonds; the annual payment of five and one-third per cent. on the sum borrowed, or three and one-fifth per cent. on the face of the bonds for the term of ninety-four years cancels the bond debt.

The shares, $80,000,000, to be refunded are treated separately. The refund with this road does not commence until the end of fifty years, to be then completed in forty-four years.

The shares, as before stated, derive from the net earnings: 1st. Interest of four per centum; 2d. Dividend of eight per centum; 3d. Supplementary dividend of half the remainder.

As the shares are refunded, the four per centum interest on them of course ceases, but they remain entitled to jouissance, that is, to participate in dividends and supplements the same as those not paid off; and the jouissance being transferable, the value of shares is thus equalized for the whole term. The sinking fund for shares at the end of fifty years will therefore be composed as follows:

Interest on $80,000,000, at four per centum.....	$3, 200, 000 00
Which requires a forty-four years' sinking fund of.....	693, 195 85
Producing the annuity of.....	3, 893, 195 00

The appropriation for the reimbursement of shares diminishes the dividends to an equal amount; and the effect is the same as if full dividends were continued to the end, and the shares then surrendered without reimbursement. But the method adopted relieves the shares from the embarrassment in market of a diminishing value by daily diminishing time to run. It gives them a uniform value as if in perpetuity, subject only to the fluctuations arising from varying prospects of dividends, &c.; and the jouissance of retired shares renders these of equal value with the continuing shares.

In the event of the net earnings being insufficient to meet the claims for interest and dividends, in the order of precedence before stated, they fail to receive in reverse order, commencing with No. 7. It is obvious, therefore, that the risk in regard to 1, 2, and 3, which cover the bond debt, is very small; and this, in connexion with the guarantee of the State for fifty years, makes these bonds *the steadiest funds in market.*

The period of commencement to reimburse shares is not uniform. In some companies it is distributed over the whole term, in others over the last half of it. There are also differences of interest in some of the small loans, and the subventions are not uniform.

But these variations are of minor importance; they belong to the earlier periods of the roads, nearly all of which were disastrous, and some of them failures.

Under the existing government all the old companies have been remodelled and regularized, and together with the general plan developed in the case of the "Paris, L. and M."

The branches and cross roads are not all completed; considerable expenditures are yet requisite, and in sections of country which will perhaps receive from the roads greater benefits than they will return to them. Whether the dividends will be augmented or diminished by the further outlays is therefore a problem which remains to be solved.

But the rapid extension and uniform prosperity of the roads of late years is undoubtedly owing to the adoption of a financial system which creates confidence and commands capital at low interest, and to an improved administration both in constructing and in working the roads.

I have described above the efficient organizations both in the administrative and operative departments, and I do not intend to go into the details of their work. But there is one consideration which will perhaps be better appreciated by a little development.

It is obvious that the chief benefits of railways arise from diminished cost in transferring persons and property and from the saving in time.

Saving in time is a chief element of gain; and it applies not only to the great multitude of persons always in motion on the roads, but to all those whose movements are connected with these, and thus, by extension to the whole people, the exchangeable products of whose industry are in daily movement.

Every minute thus saved is clear gain; it has a money value, and may be multiplied by millions in its application to the industrial affairs of a nation.

It is necessary, therefore, to the full saving of time by railways that all their movements and connexions should be uniform, certain, and harmonious.

To this end the French method is worthy of consideration. All the railways in the empire are worked by *one time*, which is supplied by the observatory at Paris, and regulated at all points by telegraph.

Railway time, therefore, does not agree with local time anywhere but on the

meridian of Paris. Five degrees east the railway time will be twenty minutes too slow; five degrees west, twenty minutes too fast, &c. But this is easily remedied. Every station has a clock; each clock carries two minute hands, (on the same shaft,) one red and the other black; one is set to the Paris or railway time, and the other to local time, and being once so set require no change. Thus, every clock marks the railway time and local time, and both correctly. Accurate time thus spreads to all towns and villages, and to all clocks and watches; the railway, with its adjuncts, the telegraphs and observatory, form a national clock, which marks local and central time in all parts of the empire. The economical value of this is obvious; applied to the combined movements of all railways, and to the industrial movements in connexion with them, and to the multitudes of passengers and their affairs, it produces a uniformity and harmony, regularity and certainty, and consequent saving of time, as desirable and valuable as the method is cheap and simple.

The roads are also conducted with the least injury to persons and property, (which is likewise economy,) as I shall presently show. The service, if not the cheapest possible, is reasonable in price, and regular and rapid in movement; and while the bonds are steadiest in value, the stocks receive and earn the largest average dividends of any roads in the world.

The cost of the roads (double tracks) is not uniform, but varies with the character of the country and the value of the lands.

The cost per mile of the—

Northern is	$146, 470,	including	rolling stock.
Eastern	138, 052,	do.	do.
Western	111, 021,	do.	do.
Orleans	120, 996,	do.	do.
Paris and Lyons	154, 464,	do.	do.
Southern	98, 792,	do.	do.
	770, 065		

General average cost, $128, 334 per mile.

The united capital of the six companies is—

Eastern	$156, 366, 200
Northern	146, 222, 524
Western	174, 981, 500
Orleans	183, 613, 798
Paris and Lyons	325, 323, 792
Southern	57, 625, 676
	1, 044, 128, 490

Divided into—

Stock	$265, 611, 124	= about 25.5 per cent.
Loans	716, 423, 574	= about 68.5 per cent.
Government	62, 093, 792	= about 5.9 per cent.
	1, 044, 128, 490	= about 100 per cent.

The tariffs are nearly uniform on all the roads, and for passengers are divided as follows:

1st class, per 100 miles, $3 37; 2d class, per 100 miles, $2 53; 3d class, per 100 miles, $1 84.

On English roads—1st class, $4 30; 2d class, $3 11; 3d class, $1 92.

French tariff lower about 28 per cent., 1st class; 23 per cent., 2d class; 4 per cent., 3d class.

The classification exhibits different results on different roads, as shown in the gross income of each.

	West.	East.	North.	Orleans.	P. & L.	South.
	Pr. cent.	*Pr. cent.*	*Pr. cent*	*Pr. cent*	*Pr. cent.*	*Per cent.*
From passengers, quick time	48.85	29.00	33.40	35.70	40.00	51.50
Dogs, horses, carriages, light merchandise, &c.	7.05	8.00	9.20	8.92	8.50	6.40
	55.90	37.00	42.60	44.62	48.50	57.90
Freight trains	44.10	63.00	57.40	55.38	51.50	42.10
	100	100	100	100	100	100
Of passengers, 1st class	10.13	7.25	10.40	11.74	7.54	10.00, 9.50
2d class	27.04	15.70	24.30	15.94	14.91	16.00, 18.99
3d class	62.83	77.05	65.30	72.32	77.55	74.00, 71.50
	100	100	100	100	100	100

It results from the preceding that passengers divide themselves as follows:

1st class,	951, at $3 37	$320, 487
2d class,	1, 899, at 2 53	480, 447
3d class,	7, 150, at 1 84	1, 315, 600
	10, 000	2, 116, 574

Producing an average of $2\frac{1}{10}$ cents per passenger per mile, which is a moderate price. Of thirty-seven millions of passengers carried the average distance, of 1st class, 104 miles; 2d class, 48 miles; 3d class, 42 miles.

The baggage allowed free to each passenger is 66 pounds, but as extra baggage is carried generally by 1st class, and only a part of this class, the income from the excess does not amount to an appreciable percentage on the whole number.

The gross earnings of the six companies for 1859 (which is the latest of which I have been able to get the figures) were $77,512,448, and expenses $43\frac{1}{2}$ per cent.; leaving for interest, dividends, &c., $56\frac{1}{2}$ per cent., or $43,796,529. This is about $4\frac{1}{5}$ per cent. on a capital of $1,044,128,490. Large extensions have since been completed and rendered productive; but as the subvention draws no interest, and the interest on bond debts is but three per cent., the sum left from the above is sufficient, after interest and annuities, for large dividends on stocks.

The stock dividends for a series of years, up to 1860, were as follows:

Northern, 4, 6, 9, $11\frac{1}{4}$, $10\frac{1}{2}$, $12\frac{1}{4}$, 15, 14, 15, $16\frac{1}{4}$ per cent.; eastern, 4, 4, 4, $6\frac{1}{2}$, 6, $12\frac{1}{2}$, $15\frac{3}{4}$, $14\frac{3}{4}$, 8+, 8+, fusion; western, $4\frac{1}{4}$, $4\frac{1}{4}$, $5\frac{1}{4}$, 10, 8, $7\frac{1}{2}$, $6\frac{1}{2}$, $7\frac{1}{2}$; Orleans, $11\frac{1}{2}$, $11\frac{1}{2}$, $12\frac{1}{2}$, $8\frac{1}{2}$, $12\frac{1}{2}$, $13\frac{3}{4}$, 16, $16\frac{3}{4}$, 18, $17\frac{1}{2}$, $19\frac{1}{2}$; southern, (new,) 4, 4, 4, $5\frac{1}{2}$; Paris and Marseilles, (fusion,) $10\frac{1}{2}$, 10, $12\frac{1}{2}$.

The dividends previous to the fusion were cut up among branches and tributaries, and not expressible in single numbers.

The current prices of shares at the Bourse are as follows:

Northern, shares of $80, current value	$199\frac{3}{4}$
Eastern, shares of $100, current value	$117\frac{1}{2}$
Southern, shares of $100, current value	$145\frac{1}{2}$
Western, shares of $100, current value	$110\frac{1}{2}$
Paris and Lyons, shares of $100, current value	218
Orleans, shares of $100, current value	270

The bonds of all the roads are steady, at a small advance on the prices at which they were issued.

The number of railway accidents causing injury to persons during a period in which 158,399,934 passengers have been carried amounts to 1,754, which produced 642 deaths and 1,112 wounds or injuries.

The analysis gives the following results:

	Killed.	Injured.	Killed.	Wounded.
Agents and employés, from apparently unavoidable accidents	38	148		
Other persons along the roads	5	6		
	—	—	43	154
Agents and employés, victims of their own imprudence and carelessness	321	502		
Other persons standing about on the lines	161	77		
	—	—	482	579
Total	...	....	525	733
Passengers, by apparently unavoidable accidents	81	319		
By carelessness and departure from the rules	36	60		
	—	—	117	379
Total	...	....	642	1,112

The greatest number of accidents occur to employés who are careful of their charge, but, from habit, become heedless of themselves; also to idlers about the stations and along the road.

The accidents to passengers are as 1 to 319,355, and deaths as 1 to 1,353,846. Subtracting from these the thirty-six killed by their own imprudence, leaves 1 to 1,955,555 passengers.

A comparison with the movement by diligence for a period of ten years shows 7,100,216 passengers; 258 accidents, of which 20 deaths, which gives one (1) accident to 27,520 passengers, and one death to 355,010.

There can be no doubt but the fusions have improved the economy and organizations of the roads and the regularity and rapidity of the service.

Coming the other day from Strasburg to Pasis, with five hundred passengers and a heavy train, I observed that we were losing time. The little time-tables, with the double columns of time, sold to travellers for a cent, show both the Paris and local time of all stations, with the minute for arrival and departure at each station, and the traveller knows as well as the conductor when the work is in order or out of order. The engine became suddenly weak, and lost time. The conductor pulled up in the first siding, connected his portable telegraph with the wires, and called for a heavy engine, twelve miles distant. It came down, and we were under way again in thirty-two minutes. But we were now one hour and five minutes behind time, had a three hours' run of forty miles to make, and but one hour and fifty minutes to make it in. She was accordingly put up to sixty miles, and we arrived at Paris but four minutes out of time.

I don't speak of this as extraordinary; but such accidents must be frequent, and I have no doubt are as readily repaired.

It is the business of the inspector to observe as he passes certain stations whether a spare engine, with light steam on, is waiting a call. He is consequently never at a loss where to send for help, and the telegraph is his messenger.

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